

What is claimed is:

1. A matrix card comprising:
  - a plurality of physical layer devices, each of said physical layer devices adapted to support cells of first and second priorities and including a controllable port, said ports in operative communication with each other to provide for the transmission of all cells of said first priority from all of said plurality of physical layer devices before transmitting any cells of said second priority from all of said plurality of physical layer devices.
2. The matrix card of claim 1, wherein said physical layer devices each comprise:
  - a first buffer for supporting cells of said first priority;
  - a second buffer for supporting cells of said second priority; and
  - a controller in communication with said first buffer and said port.
3. The matrix card of claim 2, wherein said controller comprises:
  - a counter;
  - a state machine; and
  - a buffer operably coupled to said counter and said state machine.
4. The matrix card of claim 2, wherein said ports are connected along a bus.
5. A matrix card, comprising:
  - an ATM layer device;
  - a plurality of physical layer devices, each physical layer device having first and second queues for cells of first and second priority levels, respectively, and a priority status port;
  - a first bus, coupled between the physical layer devices and the ATM device, wherein the physical layer devices access the first bus in a round robin fashion; and
  - a second bus, coupled to the priority status port of each of the physical layer devices, the second bus providing an indication as to whether any of the physical layer devices has cells in its respective first queue to allow for priority handling of cells in the first queue.

6. The matrix card of claim 5, wherein the first bus comprises a UTOPIA bus.
7. The matrix card of claim 5, wherein the physical layer devices each have a high priority queue for constant bit rate traffic and a low priority queue for non-constant bit rate traffic.
8. The matrix card of claim 5, wherein the physical layer devices each include a control circuit that is adapted to ground the second bus when cells are stored in the first queue of any of the physical layer devices.
9. A method for controlling access to a bus for a plurality of physical layer devices, the method comprising:
- determining when any of the physical layer devices has priority traffic in a queue;
  - when priority traffic is queued in any of the physical layer devices, transmitting the priority traffic; and
  - when there is no priority traffic queued, transmitting other traffic from the plurality of physical layer devices.
10. The method of claim 9, wherein transmitting priority traffic comprises transmitting priority traffic in a round robin fashion among the physical layer devices having priority traffic in their respective queues.
11. The method of claim 9, wherein transmitting other traffic comprises transmitting other traffic in a round robin fashion from physical layer devices with traffic in their respective queues.
12. The method of claim 9, wherein determining when any of the physical layer devices has priority traffic in a queue comprises determining when any of the physical layer devices have constant bit rate traffic.

13. A physical layer device, comprising:

first and second queues for processing cells with first and second priorities, respectively;

a priority status port, the priority status port adapted to communicate a status signal with other physical layer devices; and

a control circuit, coupled to the priority status port, adapted to allow cells of the first priority to be transmitted when the status signal is a first level and that allows cells of the second priority to be transmitted when the status signal is a second level.

14. The physical layer device of claim 13, wherein the first queue is a queue for constant bit rate traffic.

15. The physical layer device of claim 13, wherein the priority status port drives a bus to a low voltage level when cells are stored in the first queue.

16. A method for controlling access to a bus for a plurality of physical layer devices, the method comprising:

determining when any of the physical layer devices has at least one cell in a priority queue;

when at least one cell is in the priority queue, providing a signal with a first level to the plurality of physical layer devices;

when the signal is at the first level, transmitting the priority traffic only; and

when the signal is at a second, different level, transmitting other traffic from the plurality of physical layer devices.

17. The method of claim 16, wherein transmitting priority traffic comprises transmitting priority traffic in a round robin fashion among the physical layer devices having priority traffic in their respective queues.

18. The method of claim 16, wherein transmitting other traffic comprises transmitting other traffic in a round robin fashion from physical layer devices with traffic in a non-priority queue.

19. The method of claim 16, wherein determining any of the physical layer devices has at least one cell in a priority queue comprises determining when any of the physical layer devices have constant bit rate traffic.

20. A matrix card comprising:

a plurality of physical layer devices, each of the physical layer devices adapted to transmit cells of first and second priorities; and

each of the plurality of physical layer devices including a status port, the status ports in operative communication with each other to provide for the transmission of cells of the first priority from the plurality of physical layer devices in round robin fashion before transmitting any cells of the second priority from the plurality of physical layer devices.